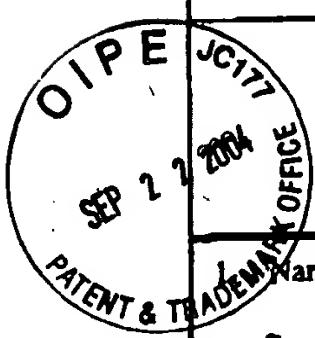


RECORDATION FORM COVER SHEET  
PATENTS ONLY

Attorney Docket Number  
9797-0030-999

TO THE HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS  
Box Assignment  
Washington, DC 20231

Please record the attached original documents or copy thereof.



Name of conveying party(ies):

Bruno W. Garlepp, Richard M. Barth, Kevin S. Donnelly, Ely K. Tsern, Craig E. Hampel, Jeffrey D. Mitchell, James A. Gasbarro, Billy W. Garrett, Jr., Frederick A. Ware and Donald V. Perino

Additional name(s) of conveying party(ies) attached?  Yes  No

3. Nature of conveyance:

Assignment  Merger  
 Security Agreement  Change of Name  
 Other \_\_\_\_\_

Execution Date: February 13, 14, 15, 16, 19, 21 and 22, 2001  
AND March 7, 2001

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: Same

A. Patent Application No.(s) 09/706,238; 11-02-00

B. Patent No.(s) \_\_\_\_\_

Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning document should be mailed:

PENNIE & EDMONDS LLP  
1155 Avenue of the Americas  
New York, NY 10036

6. Number of applications and patents involved: one

7. Total fee (37 CFR 3.41): ..... \$ 40.00  
Please charge to the deposit account listed in Section 8.

8. Deposit account number:  
16-1150 (9797-0051-999)

DO NOT USE THIS SPACE

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

Gary S. Williams

31,066

Name of Person Signing Reg. No.

Signature

March 22, 2001

Date

Total number of pages including cover sheet:

26

## ASSIGNMENT

WHEREAS, WE, (1) Bruno W. Garlepp, a resident of Austin, Texas, a citizen of the United States; (2) Richard M. Barth, a resident of Ashland, Oregon, a citizen of the United States; (3) Kevin S. Donnelly, a resident of Los Altos, California, a citizen of the United States; (4) Ely K. Tsern, a resident of Los Altos, California, a citizen of the United States; (5) Craig E. Hampel, a resident of San Jose, California, a citizen of the United States; (6) Jeffrey D. Mitchell, a resident of Santa Clara, California, a citizen of the United States; and (7) James A. Gasbarro, a resident of Fox Chapel, Pennsylvania, a citizen of the United States; (8) Billy W. Garrett, Jr., a resident of Mountain View, California, a citizen of the United States; (9) Fredrick A. Ware, a resident of Los Altos Hills, California, a citizen of the United States; and (10) Donald V. Perino, a resident of North Potomac, Maryland, a citizen of the United States; (hereinafter "ASSIGNORS"), have invented certain new and useful improvements in **AN EXPANDABLE SLAVE DEVICE SYSTEM** for which invention we have executed an application for Letters Patent of the United States and which application may be identified in the United States Patent and Trademark Office as Serial No. 09/706,238, filed November 2, 2000, which is identified by Pennie & Edmonds LLP docket no. 9808-0007-999; and

WHEREAS, RAMBUS, INC., a Delaware Corporation located at 4440 El Camino Real, Los Altos, CA 94022, (hereinafter "ASSIGNEE") is desirous of obtaining our entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said application for U.S. Letters Patent, and any and all divisions, continuations and renewals thereof, and any and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding on said Inventors, their heirs, legal representatives and assigns.

IN TESTIMONY WHEREOF, said Inventors have executed and delivered this instrument to said Assignee the day and year below written.

1. Date: Feb. 15, 2001

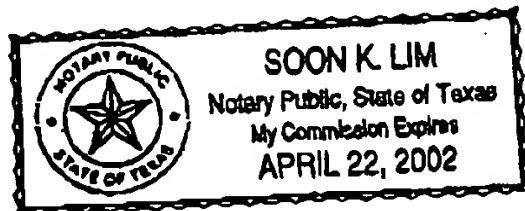
Bruno W. Garlepp  
BRUNO W. GARLEPP

State of California Texas )  
County of TRAVIS ) SS.:

On Feb 15 2001 before me, SOON K. LIM, personally appeared BRUNO W. GARLEPP, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



SOON K. LIM  
(Typed name of Notary)  
SOON K. LIM

2. Date: \_\_\_\_\_

RICHARD M. BARTH

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared RICHARD M. BARTH, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

3. Date: \_\_\_\_\_

KEVIN S. DONNELLY

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared KEVIN S. DONNELLY personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

4. Date: \_\_\_\_\_

ELY K. TSERN

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared ELY K. TSERN personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

5. Date: \_\_\_\_\_

CRAIG E. HAMPEL

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared CRAIG E. HAMPEL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

6. Date: \_\_\_\_\_

JEFFREY D. MITCHELL

State of California

) SS.:  
)

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JEFFREY D. MITCHELL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

7. Date: \_\_\_\_\_

JAMES A. GASBARRO

State of California

) SS.:  
)

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JAMES A. GASBARRO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

8. Date: \_\_\_\_\_

BILLY W. GARRETT, JR.

State of California

) SS.:  
)

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BILLY W. GARRETT, JR. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

9. Date: \_\_\_\_\_

## **FREDRICK A. WARE**

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared FREDRICK A. WARE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

**WITNESS** my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

10. Date:

**DONALD V. PERINO**

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared DONALD V. PERINO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

JOINT  
ASSIGNMENT

WHEREAS, WE, (1) Bruno W. Garlepp, a resident of Austin, Texas, a citizen of the United States; (2) Richard M. Barth, a resident of Ashland, Oregon, a citizen of the United States; (3) Kevin S. Donnelly, a resident of Los Altos, California, a citizen of the United States; (4) Ely K. Tsern, a resident of Los Altos, California, a citizen of the United States; (5) Craig E. Hampel, a resident of San Jose, California, a citizen of the United States; (6) Jeffrey D. Mitchell, a resident of Santa Clara, California, a citizen of the United States; and (7) James A. Gasbarro, a resident of Fox Chapel, Pennsylvania, a citizen of the United States; (8) Billy W. Garrett, Jr., a resident of Mountain View, California, a citizen of the United States; (9) Fredrick A. Ware, a resident of Los Altos Hills, California, a citizen of the United States; and (10) Donald V. Perino, a resident of North Potomac, Maryland, a citizen of the United States; (hereinafter "ASSIGNORS"), have invented certain new and useful improvements in **AN EXPANDABLE SLAVE DEVICE SYSTEM** for which invention we have executed an application for Letters Patent of the United States and which application may be identified in the United States Patent and Trademark Office as Serial No. 09/706,238, filed November 2, 2000, which is identified by Pennie & Edmonds LLP docket no. 9808-0007-999; and

WHEREAS, RAMBUS, INC., a Delaware Corporation located at 4440 El Camino Real, Los Altos, CA 94022, (hereinafter "ASSIGNEE") is desirous of obtaining our entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said application for U.S. Letters Patent, and any and all divisions, continuations and renewals thereof, and any and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding on said Inventors, their heirs, legal representatives and assigns.

IN TESTIMONY WHEREOF, said Inventors have executed and delivered this instrument to said Assignee the day and year below written.

1.      Date: \_\_\_\_\_

State of California      }  
County of      }      SS.:

---

## **BRUNO W. GARLEPP**

---

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BRUNO W. GARLEPP, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

2. Date: 2-21-01

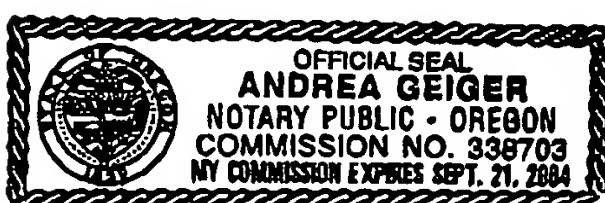
  
RICHARD M. BARTH

State of Oregon } SS.:  
County of Jackson } )

On 2-21-01 before me, Andrea Ge; Gler personally appeared RICHARD M. BARTH personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

NOTARY SEAL

Andrea Geiger  
(Typed name of Notary)  
ANDREA GEIGER



3. Date: \_\_\_\_\_

KEVIN S. DONNELLY

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_ personally appeared KEVIN S. DONNELLY personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

4. Date: \_\_\_\_\_

ELY K. TSERN

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_ personally appeared ELY K. TSERN personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

5. Date: \_\_\_\_\_

CRAIG E. HAMPEL

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_ personally appeared CRAIG E. HAMPEL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

6. Date: \_\_\_\_\_

JEFFREY D. MITCHELL

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JEFFREY D. MITCHELL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

7. Date: \_\_\_\_\_

JAMES A. GASBARRO

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JAMES A. GASBARRO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

8. Date: \_\_\_\_\_

BILLY W. GARRETT, JR.

State of California

} SS.:  
})

County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BILLY W. GARRETT, JR. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

9. Date: \_\_\_\_\_

FREDRICK A. WARE

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared FREDRICK A. WARE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

10. Date: \_\_\_\_\_

DONALD V. PERINO

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared DONALD V. PERINO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

JOINT  
ASSIGNMENT

WHEREAS, WE, (1) Bruno W. Garlepp, a resident of Austin, Texas, a citizen of the United States; (2) Richard M. Barth, a resident of Ashland, Oregon, a citizen of the United States; (3) Kevin S. Donnelly, a resident of Los Altos, California, a citizen of the United States; (4) Ely K. Tsern, a resident of Los Altos, California, a citizen of the United States; (5) Craig E. Hampel, a resident of San Jose, California, a citizen of the United States; (6) Jeffrey D. Mitchell, a resident of Santa Clara, California, a citizen of the United States; and (7) James A. Gasbarro, a resident of Fox Chapel, Pennsylvania, a citizen of the United States; (8) Billy W. Garrett, Jr., a resident of Mountain View, California, a citizen of the United States; (9) Fredrick A. Ware, a resident of Los Altos Hills, California, a citizen of the United States; and (10) Donald V. Perino, a resident of North Potomac, Maryland, a citizen of the United States; (hereinafter "ASSIGNORS"), have invented certain new and useful improvements in **AN EXPANDABLE SLAVE DEVICE SYSTEM** for which invention we have executed an application for Letters Patent of the United States and which application may be identified in the United States Patent and Trademark Office as Serial No. 09/706,238, filed November 2, 2000, which is identified by Pennie & Edmonds LLP docket no. 9808-0007-999; and

WHEREAS, RAMBUS, INC., a Delaware Corporation located at 4440 El Camino Real, Los Altos, CA 94022, (hereinafter "ASSIGNEE") is desirous of obtaining our entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said application for U.S. Letters Patent, and any and all divisions, continuations and renewals thereof, and any and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding on said Inventors, their heirs, legal representatives and assigns.

IN TESTIMONY WHEREOF, said Inventors have executed and delivered this instrument to said Assignee the day and year below written..

1. Date: \_\_\_\_\_

---

**BRUNO W. GARLEPP**

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BRUNO W. GARLEPP, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL.**

(Typed name of Notary)

2. Date: \_\_\_\_\_

---

## RICHARD M. BARTH

---

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared RICHARD M. BARTH personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

3. Date: \_\_\_\_\_

KEVIN S. DONNELLY

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared KEVIN S. DONNELLY personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

4. Date: \_\_\_\_\_

ELY K. TSERN

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared ELY K. TSERN personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

5. Date: \_\_\_\_\_

CRAIG E. HAMPEL

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared CRAIG E. HAMPEL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

6. Date:

JEFFREY D. MITCHELL

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JEFFREY D. MITCHELL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

7. Date: 2/13/01

  
\_\_\_\_\_  
JAMES A. GASBARRO

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JAMES A. GASBARRO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal

**NOTARY SEAL**

(Typed name of Notary)

8. Date:

**BILLY W. GARRETT, JR.**

On \_\_\_\_\_ before me, \_\_\_\_\_ personally appeared BILLY W. GARRETT, JR. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument

WITNESS my hand and official seal

**NOTARY SEAL**

(Typed name of Notary)

9. Date: \_\_\_\_\_

FREDRICK A. WARE

State of California  
County of \_\_\_\_\_

)  
} SS.:  
)

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared FREDRICK A. WARE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

10. Date: \_\_\_\_\_

DONALD V. PERINO

State of California  
County of \_\_\_\_\_

)  
} SS.:  
)

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared DONALD V. PERINO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

## ASSIGNMENT

WHEREAS, WE, (1) Bruno W. Garlepp, a resident of Austin, Texas, a citizen of the United States; (2) Richard M. Barth, a resident of Ashland, Oregon, a citizen of the United States; (3) Kevin S. Donnelly, a resident of Los Altos, California, a citizen of the United States; (4) Ely K. Tsern, a resident of Los Altos, California, a citizen of the United States; (5) Craig E. Hampel, a resident of San Jose, California, a citizen of the United States; (6) Jeffrey D. Mitchell, a resident of Santa Clara, California, a citizen of the United States; and (7) James A. Gasbarro, a resident of Fox Chapel, Pennsylvania, a citizen of the United States; (8) Billy W. Garrett, Jr., a resident of Mountain View, California, a citizen of the United States; (9) Fredrick A. Ware, a resident of Los Altos Hills, California, a citizen of the United States; and (10) Donald V. Perino, a resident of North Potomac, Maryland, a citizen of the United States; (hereinafter "ASSIGNORS"), have invented certain new and useful improvements in **AN EXPANDABLE SLAVE DEVICE SYSTEM** for which invention we have executed an application for Letters Patent of the United States and which application may be identified in the United States Patent and Trademark Office as Serial No. 09/706,238, filed November 2, 2000, which is identified by Pennie & Edmonds LLP docket no. 9808-0007-999; and

WHEREAS, RAMBUS, INC., a Delaware Corporation located at 4440 El Camino Real, Los Altos, CA 94022, (hereinafter "ASSIGNEE") is desirous of obtaining our entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said application for U.S. Letters Patent, and any and all divisions, continuations and renewals thereof, and any and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding on said Inventors, their heirs, legal representatives and assigns.

IN TESTIMONY WHEREOF, said Inventors have executed and delivered this instrument to said Assignee the day and year below written.

1. Date:

---

## **BRUNO W. GARLEPP**

---

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BRUNO W. GARLEPP, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL.**

(Typed name of Notary)

2. Date: \_\_\_\_\_

## RICHARD M. BARTH

State of California }  
County of \_\_\_\_\_ : } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_ personally appeared RICHARD M. BARTH personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)



6. Date: \_\_\_\_\_

**JEFFREY D. MITCHELL**

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JEFFREY D. MITCHELL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

7. Date: \_\_\_\_\_

**JAMES A. GASBARRO**

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JAMES A. GASBARRO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

8. Date:

**BILLY W. GARRETT, JR.**

State of California )  
County of \_\_\_\_\_ ) SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BILLY W. GARRETT, JR. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

9. Date: \_\_\_\_\_

FREDRICK A. WARE

State of California

} SS.:  
County of \_\_\_\_\_

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared FREDRICK A. WARE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

10. Date: 2/15/01

Donald V. Perino  
DONALD V. PERINO

State of California

} SS.:  
County of Montgomery

On Feb. 15 2001 before me, Judy Johnson, personally appeared DONALD V. PERINO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)

Judy Johnson  
Judy Johnson

JOINT  
ASSIGNMENT

WHEREAS, WE, (1) Bruno W. Garlepp, a resident of Austin, Texas, a citizen of the United States; (2) Richard M. Barth, a resident of Ashland, Oregon, a citizen of the United States; (3) Kevin S. Donnelly, a resident of Los Altos, California, a citizen of the United States; (4) Ely K. Tsern, a resident of Los Altos, California, a citizen of the United States; (5) Craig E. Hampel, a resident of San Jose, California, a citizen of the United States; (6) Jeffrey D. Mitchell, a resident of Santa Clara, California, a citizen of the United States; and (7) James A. Gasbarro, a resident of Fox Chapel, Pennsylvania, a citizen of the United States; (8) Billy W. Garrett, Jr., a resident of Mountain View, California, a citizen of the United States; (9) Fredrick A. Ware, a resident of Los Altos Hills, California, a citizen of the United States; and (10) Donald V. Perino, a resident of North Potomac, Maryland, a citizen of the United States; (hereinafter "ASSIGNORS"), have invented certain new and useful improvements in **AN EXPANDABLE SLAVE DEVICE SYSTEM** for which invention we have executed an application for Letters Patent of the United States and which application may be identified in the United States Patent and Trademark Office as Serial No. 09/706,238, filed November 2, 2000, which is identified by Pennie & Edmonds LLP docket no. 9808-0007-999; and

WHEREAS, RAMBUS, INC., a Delaware Corporation located at 4440 El Camino Real, Los Altos, CA 94022, (hereinafter "ASSIGNEE") is desirous of obtaining our entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter termed "patents") thereon granted in the United States and foreign countries, to and under the said invention and the said application:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the said ASSIGNORS, hereby sell, assign, transfer and set over, unto the said ASSIGNEE, its successors, legal representatives and assigns, our entire right, title and interest in, to and under the said invention, and the said application for U.S. Letters Patent, and any and all divisions, continuations and renewals thereof, and any and all Patents of the United States which may be granted thereon and all reissues and extensions thereof; and all applications for industrial property protection, including, without limitation, all applications for patents, utility models, and designs which may hereafter be filed for said invention in any country or countries foreign to the United States, together with the right to file such applications and the right to claim for the same the priority rights derived from said United States application under the Patent Laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or the domestic laws of the country in which any such application is filed, as may be applicable; and all forms of industrial property protection, including, without limitation, patents, utility models, inventors' certificates and designs which may be granted for said invention in any country or countries foreign to the United States and all extensions, renewals and reissues thereof;

WE HEREBY authorize and request the Commissioner of Patents and Trademarks of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

• **AND WE HEREBY** further covenant and agree that we will communicate to the said ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue and foreign applications, make all rightful oaths, and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries.

The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding on said Inventors, their heirs, legal representatives and assigns.

IN TESTIMONY WHEREOF, said Inventors have executed and delivered this instrument to said Assignee the day and year below written.

1. Date:

---

**BRUNO W. GARLEPP**

---

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared BRUNO W. GARLEPP, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

**NOTARY SEAL**

(Typed name of Notary)

2. Date: \_\_\_\_\_

---

## RICHARD M. BARTH

State of California )  
County of \_\_\_\_\_ ) SS.

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared RICHARD M. BARTH personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

**WITNESS** my hand and official seal.

## NOTARY SEAL

(Typed name of Notary)

3. Date: 3/7/01

Kevin S. Donnelly  
KEVIN S. DONNELLY

State of California }  
County of Santa Clara } SS.:

On March 7, 2001 before me, Michiko Sites, personally appeared KEVIN S. DONNELLY personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



4. Date: 2/16/01

Michiko Sites  
(Typed name of Notary) Michiko Sites

State of California }  
County of Santa Clara } SS.:

On Feb. 16, 2001 before me, Michiko Sites personally appeared ELY K. TSERN personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



5. Date: 02/13/01

Michiko Sites  
(Typed name of Notary) Michiko Sites

State of California }  
County of Santa Clara } SS.:

On Feb. 13, 2001 before me, Michiko Sites, personally appeared CRAIG E. HAMPEL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



9797-0051-999 (RA137)

Michiko Sites  
(Typed name of Notary) Michiko Sites

CA1 - 265841.1

6. Date: 02/22/01

Jeffrey D. Mitchell  
JEFFREY D. MITCHELL

State of California }  
County of Santa Clara } SS.:

On Feb. 22, 2001 before me, Michiko Sites personally appeared JEFFREY D. MITCHELL personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



Michiko Sites  
(Typed name of Notary) Michiko Sites

7. Date: \_\_\_\_\_

JAMES A. GASBARRO

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared JAMES A. GASBARRO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

\_\_\_\_\_  
(Typed name of Notary)

8. Date: 02/19/2001

Billy W. Garrett, Jr.  
BILLY W. GARRETT, JR.

State of California }  
County of Santa Clara } SS.:

On 19 Feb 2001 before me, Michiko Sites personally appeared BILLY W. GARRETT, JR. personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



Michiko Sites  
(Typed name of Notary) Michiko Sites

9. Date: 2/13/01

  
FREDRICK A. WARE

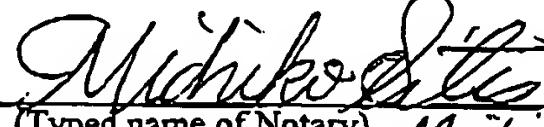
State of California }  
County of Santa Clara } SS.:

On Feb. 13, 2001 before me, Michiko Sites, personally appeared FREDRICK A. WARE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL



  
(Typed name of Notary) Michiko Sites

10. Date: \_\_\_\_\_

DONALD V. PERINO

State of California }  
County of \_\_\_\_\_ } SS.:

On \_\_\_\_\_ before me, \_\_\_\_\_, personally appeared DONALD V. PERINO personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

NOTARY SEAL

(Typed name of Notary)



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APRIL 17, 2001

PTAS

ROSS D. SYNDER & ASSOCIATED, INC.  
ROSS D. SYNDER  
115 WILD BASIN ROAD  
AUSTIN, TEXAS 78746



\*101608041A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 01/25/2001

REEL/FRAME: 011487/0997  
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

WARE, FREDERICK A.

DOC DATE: 01/24/2001

ASSIGNEE:

RAMBUS INC.  
4440 EL CAMINO REAL  
LOS ALTOS, CALIFORNIA 94022

SERIAL NUMBER: 09770996

FILING DATE: 01/25/2001  
ISSUE DATE:

PATENT NUMBER:

JEEVON JONES, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

ROSS D. SNYDER &  
REC APR 23 2001 V'D  
ASSOCIATES, INC.

02-08-2001



Attorney Docket No.: 1726.7219800

101608041

10/09/96 PTO  
01/28/01  
JC 96/770996 PTO

U.S. Department of Commerce

FORM PTO-1595  
(Rev. 6-93)

RECORDATION FORM COVER SHEET

OMB No. 0651-0011 (exp. 4/30/01)

## PATENTS ONLY

Patent and Trademark Office

To the Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies).

1. Name of conveying party(ies):

(a) Frederick A. Ware

Additional name(s) of conveying party(ies) attached?  Yes  No

3. Nature of conveyance:

 Assignment Merger Security Agreement Change of Name Other

Execution Date:

(a) 01-24-2001

2. Name and address of receiving party(ies):

RAMBUS INC.  
4440 El Camino Real  
Los Altos, CA 94022Additional name(s) & address(es) attached?  Yes  No

4. Application number(s) or registration number(s): ; Attorney Docket No: 1726.7219800

METHOD AND APPARATUS FOR SIMULTANEOUS BIDIRECTIONAL SIGNALING IN A BUS TOPOLOGY

If this document is being filed together with a new application, the execution date of the application is: 01-24-2001

A. Patent Application No.(s):

09/770996

B. Patent No.(s):

Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Ross D. Snyder  
Ross D. Snyder & Associates, Inc.  
115 Wild Basin Road

City: Austin State: Texas Zip: 78746

6. Total number of applications and patents involved: 1

7. Total fee (37 C.F.R. 3.41) \$ 40.00

 Enclosed Authorized to be charged to deposit account  
if check insufficient or inadvertently omitted

8. Deposit account number: 50-1566

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Ross D. Snyder, Reg. No. 37,730

Name and Registration Number of Person Signing

Signature

Date

Total number of pages including cover sheet, attachments and documents: 3

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents and Trademarks, Office of Public Records,  
Crystal Gateway 4, Room 335, Washington, D.C. 20231

01/01/2001 NROCHAI 00000044 09770996

04 FC:581

40.00 0F

**PATENT**

**ASSIGNMENT OF U.S. PATENT APPLICATION**

This is an assignment of patent right between the inventor(s),

**Frederick A. Ware**

(herein after referred to as the Inventor) and **RAMBUS INC.**, having a principal place of business at 4440 El Camino Real, Los Altos, CA 94022 (herein after referred to as the Assignee).

WHEREAS, Inventor has caused to be prepared a United States Patent Application in the Inventor's name entitled

**METHOD AND APPARATUS FOR SIMULTANEOUS  
BIDIRECTIONAL SIGNALING IN A BUS TOPOLOGY**

having a docket number of 1726.7219800 (herein after referred to as the Patented Invention); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the Patented Invention.

NOW, THEREFORE, the parties agree as follows:

1. The Inventor hereby sells, assigns, and transfers its entire rights, title, and interest in the Patented Invention and all patents that may be granted therefrom due to divisions, reissue, substitutions, extensions, continuations, and continuations-in-part to the Assignee.
2. The Inventor hereby sells, assigns, and transfers its entire rights, title, and interest in any foreign (non U.S.) national patent application, invention registration, or equivalent (Foreign Applications), claiming approximately the same subject matter of the Patented Invention to the Assignee.
3. Inventor hereby authorizes and requests the Commissioner of Patents and Trademarks to issue the patent for the Patented Invention, and all resulting patents therefrom, insofar as Inventor's interest is concerned, to the Assignee.
4. The Inventor further agrees to execute any and all powers of attorney, applications, assignments, declarations, affidavits, and any other papers in connection therewith necessary to perfect such rights, title, and interest in the Assignee.

5. The Inventor hereby further agrees to communicate with the Assignee any facts it knows regarding any improvements of the Patented Invention while employed by Assignee and for one year thereafter.

6. The Inventor hereby yet further agrees to, with respect to the referenced patent application, at the expense of the Assignee:

- i) testify in any legal proceedings,
- ii) sign all lawful papers,
- iii) execute all divisional, continuation, continuation-in-part, reissue and substitute applications,
- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Patented Invention in all countries, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Application or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

This assignment is executed on the date(s) of which the Inventor has signed.

Inventor(s):

Frederick A. Ware

Date:

1/24/01

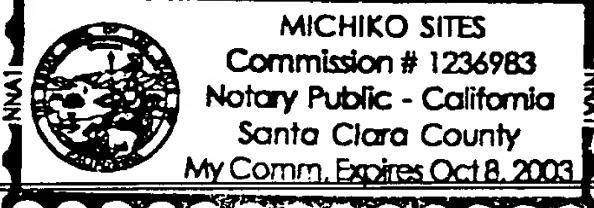
State of California

County of Santa Clara)

SS:

Before me personally appeared said **Frederick A. Ware** and acknowledge the foregoing instrument to be his/her free act and deed this 24<sup>th</sup> day of January, 2001.

Seal



Michiko Sites  
(Notary)